ERCE

PREPARED FOR:

PIEDMONT NATURAL GAS COMPANY
CHARLOTTE, NORTH CAROLINA

REPORT FOR:

TANK CLOSURE
PIEDMONT NATURAL GAS
WINSTON-SALEM, NORTH CAROLINA
ERCE - JOB NO. 13564701

PREPARED BY:

ERCE
HUNTERSVILLE, NORTH CAROLINA

OCTOBER 8, 1991

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

TANK CLOSURE REPORT
Piedmont Natural Gas Company
250 Linden Street
Winston-Salem, North Carolina

1.0 BACKGROUND AND SITE HISTORY

On August 16, 1991, ERC Environmental and Energy Services Company (ERCE) was retained by the Piedmont Natural Gas Company (Piedmont) to perform tank closure services at the Service Operations Center located at 250 Linden Street, Winston-Salem, North Carolina (Forsyth County). A regional site location map (Figure 1) is included in Appendix I.

ERCE employed the services of Frank and Jones, Inc. of Charlotte, North, Carolina to excavate and remove two underground storage tanks (USTs) at the referenced site and to restore the land surface to near original condition.

1.1 Scope of Work

During this tank closure, the following tasks were performed under the direction of ERCE and/or its subcontractors.

- Removal of any residual product remaining in storage tanks;
- Excavation of one 6,000-gallon and one 500-gallon USTs and associated piping at the referenced facility;
- Disposal of the USTs by a licensed tank disposal firm;
- Screening of the soils from the excavation for volatile organics using a photoionization detector (PID);
- Sampling of the undisturbed soils beneath each storage tank for TPH analysis;
- Backfilling of UST pit to surface grade with clean soils to surface grade;
- Notification of the North Carolina Department of Environmental Management of findings at site (24 hour report and 20 day report);

- Preparation of report findings and recommendations.

2.0 SITE GEOLOGY AND TOPOGRAPHIC SETTING

The referenced site can be located within the Milton Belt Physiographic Province of North Carolina. The area is underlain by biotite and amphibolite gneiss (Upper Amphibolite Facies) of Paleozoic Age. As shown on the Site Location Map (Appendix I, Figure 1), the referenced site is located in the city of Winston-Salem (population 143,485), North Carolina (Forsyth County). The site is bounded to the north by Third Street and Linden Street to the east.

The subject site is located in the city of Winston-Salem in an area composed of light industry with neighboring residential areas. Winston-Salem has an average yearly temperature of 59 degrees Fahrenheit and an average yearly rainfall of 41.36 inches. The subject site and its surrounding area are served by municipal sewer and water service. ERCE did not discover any domestic water supply wells within a 1500 foot radius of the site. The site lies at an elevation of approximately 850 feet above mean sea level and slopes moderately to the south-southeast. Surface gradient across the site is approximately 12 feet.

3.0 TANK REMOVAL

On August 16, 1991, one 6,000-gallon and one 500-gallon UST were removed from the site by Jones and Frank, Inc. under the supervision of the ERCE on-site geologist. Each tank was purged of residual liquids by James Waste Oil Company of Greensboro, North Carolina. Any remaining hazardous vapors were reportedly purged from the tanks through the introduction of dry ice prior to transporting the tanks to the disposal site. The 6000-gallon tank reportedly

contained unleaded-grade gasoline and the 500-gallon tank contained diesel while in service. All associated piping and hardware were removed from the excavation. The gasoline storage tank was located off the western side of the building and the diesel storage tank was located beneath the southern portion of the property (see Figure 2, Appendix I). The storage tanks were relinquished to Overcash Trucking Company for transport to the disposal facility. The burial depth of the 6,000-gallon tank was approximately ten feet below surface grade. The tanks were constructed of asphalt-coated steel and the associated piping was bare (unprotected) steel. Visual inspection of each tank did not indicate the presence of any pitting or excessive corrosion.

4.0 TANK PIT SAMPLING

Four soil samples were collected from the undisturbed soils located beneath the underground storage tanks (two from beneath each tank) at a depth of approximately 14 feet below surface grade. Each sample was collected by driving a 1.5-inch inside diameter by 3-inch long stainless steel cylinder into the soil using a back-hoe bucket. The soil samples were obtained by the on-site ERCE geologist, sealed with minimal headspace, labeled, packed on ice and transported to PACE Laboratories, Inc. in Charlotte, North Carolina for total petroleum hydrocarbon (TPH) analysis by EPA Method 5030. Sample locations are illustrated in Figure 2 of Appendix I. The complete laboratory report and Chain-of-Custody are included in Appendix I.

4.1 Soil Disposition

All soils excavated from the UST pit were returned to the excavation as directed by the Piedmont Natural Gas Company.

5.0 CONCLUSIONS

One soil sample collected from each of the UST pits (south end of gasoline tank and north end of diesel tank) indicted the presence of impacted soils at or near the State's action level of 10 ppm. The analytical results from the soil samples collected from beneath the south side of the gasoline tank (sample No. 4) indicted 6 milligrams per kilogram (mg/kg) of TPH (below the State's action level of 10 ppm) and 11 mg/kg from beneath the diesel fuel tank (slightly higher than the State level of 10 ppm). Based on the analytical results obtained from the soil samples collected from this site, ERCE concludes the following:

- There has been minimal impact due to petroleum hydrocarbons at this facility;
- The probable source of these releases may have been due to occasional over-filling;
- The levels of contamination in the soils at the referenced site are nearly at or below the State's action level.
- No domestic drinking water wells are likely to be affected by the release;
- It is unlikely that the releases have impacted the ground water beneath the site.

The results of the PID screenings and soil analyses are tabulated in Table 1 and the complete laboratory reports are included in Appendix I.

6.0 RECOMMENDATIONS

ERCE recommends that no further investigative actions be initiated at the above referenced facility at this time.

Table 1. Analytical Results Summary - Soil Samples
Piedmont Natural Gas Company
250 Linden Street
Winston-Salem, North Carolina

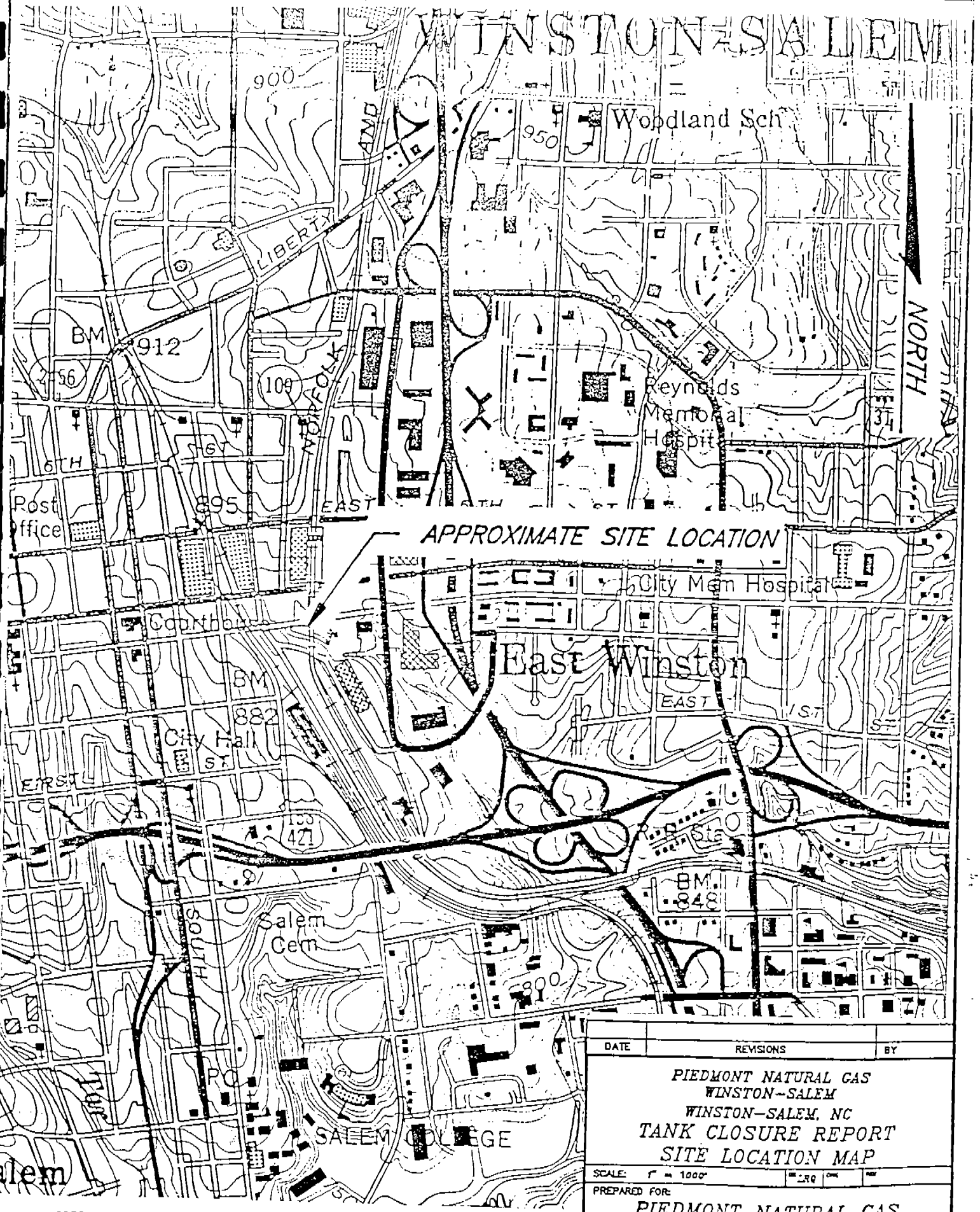
(August 16, 1991)

Sample Name & ID No.	Matrix	Sample Depth (ft)	TPH Concentration (mg/kg)
Gasoline Tank (North) 3	Soil	14(2,000+)	ND
(South) 4	Soil	14(2000+)	11
Diesel Tank (North) 1	Soil	5(680)	6
(South) 2	Soil	5(680)	ND

Milligrams per kilogram (mg/kg) are approximately equivalent to parts per million (ppm).

ND - compound analyzed for but not detected (below laboratory detection limit).

Value in parentheses () indicates PID reading in parts per million (ppm).



WINSTON-SALEM EAST QUADRANGLE
NORTH CAROLINA
7.5 MINUTE SERIES (TOPOGRAPHIC)

DATE	REVISIONS	BY

PIEDMONT NATURAL GAS
WINSTON-SALEM
WINSTON-SALEM, NC
TANK CLOSURE REPORT
SITE LOCATION MAP

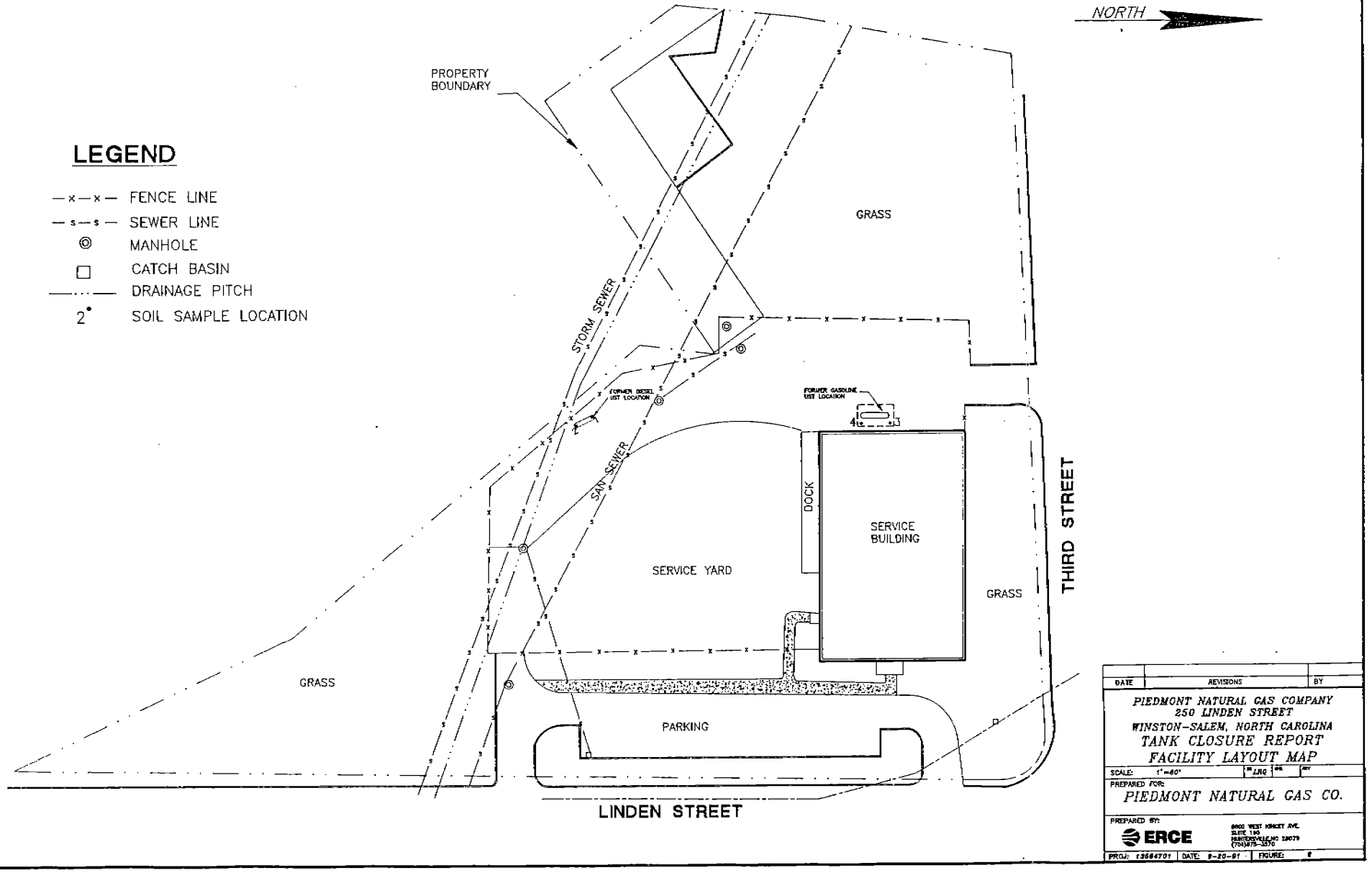
SCALE: 1" = 1000' | DRG | CHK | REF

PREPARED FOR:
PIEDMONT NATURAL GAS

PREPARED BY:
ERCE
8600 WEST KINCEY AVE.
SUITE 190
HUNTERSVILLE, NC 28078
(704)875-3370

PROJ: 13584701 | DATE: 9-13-91 | FIGURE:

ERCE


NORTH
PROPERTY BOUNDARY
LEGEND
FENCE LINE
SEWER LINE
MANHOLE
CATCH BASIN
DRAINAGE PITCH
SOIL SAMPLE LOCATION
GRASS
STORM SEWER
FORMER DIESEL UST LOCATION
FORMER GASOLINE UST LOCATION
SAN. SEWER
DOCK
SERVICE BUILDING
SERVICE YARD
GRASS
THIRD STREET
GRASS
PARKING
LINDEN STREET
DATE
REVISIONS
BY
PIEDMONT NATURAL GAS COMPANY
250 LINDEN STREET
WINSTON-SALEM, NORTH CAROLINA
TANK CLOSURE REPORT
FACILITY LAYOUT MAP
SCALE: 1"=40'
PREPARED FOR:
PIEDMONT NATURAL GAS CO.
PREPARED BY:
ERCE
PROJ: 13884701
DATE: 9-20-91
FIGURE:

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

August 20, 1991

Mr. Barry Dezell
ERCE
9800 W. Kincey Ave., Suite 190
Huntersville, NC 28078

RE: PACE Project No. 610819.501
PNG Winston Salem

Dear Mr. Dezell:

Enclosed is the report of laboratory analyses for samples received August 16, 1991.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

for Shauna G. Jenkins

Tonda S. Griffin
Project Manager

Enclosures

1700 University Commercial Place
Charlotte, NC 28213
TEL: 704-597-8454
FAX: 704-597-8455

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

ERCE
9800 W. Kincey Ave., Suite 190
Huntersville, NC 28078

August 20, 1991
PACE Project Number: 610819501

Attn: Mr. Barry Dezell

PNG Winston Salem

PACE Sample Number:			92 0091612	
Date Collected:			08/16/91	
Date Received:			08/16/91	
			Diesel Pit	
Parameter	Units	MDL	Sample 2	DATE ANALYZED
ORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Diesel Extraction - Soil			8/20/91	08/20/91
Percent Solids	%	0.01	85.5	08/19/91
Total Hydrocarbons via Method 3550	mg/kg	5.0	ND	08/19/91
Total Hydrocarbons via Method 5030	mg/kg	6.0	ND	08/19/91

MDL Method Detection Limit
ND Not detected at or above the MDL.

1700 University Commercial Place
Charlotte, NC 28213
TEL: 704-597-8454
FAX: 704-597-8455

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Barry Dezell
Page 2

August 20, 1991
PACE Project Number: 610819501

PNG Winston Salem

PACE Sample Number:	92 0091620
Date Collected:	08/16/91
Date Received:	08/16/91
	Gasoline Tank

Parameter	Units	MDL	Sample 3	DATE ANALYZED
ORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Percent Solids	%	0.01	84.8	08/19/91
Total Hydrocarbons via Method 5030	mg/kg	6.0	ND	08/19/91

MDL Method Detection Limit
ND Not detected at or above the MDL.

1700 University Commercial Place
Charlotte, NC 28213
TEL: 704-597-8454
FAX: 704-597-8455

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Barry Dezell
Page 3

August 20, 1991
PACE Project Number: 610819501

PNG Winston Salem

PACE Sample Number:			92 0091639	
Date Collected:			08/16/91	
Date Received:			08/16/91	
			Gasoline Tank	
Parameter	Units	MDL	Sample 4	DATE ANALYZED
ORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Percent Solids	%	0.01	79.0	08/19/91
Total Hydrocarbons via Method 5030	mg/kg	6.0	11	08/19/91

MDL Method Detection Limit

1700 University Commercial Place
Charlotte, NC 28213
TEL: 704-597-8454
FAX: 704-597-8455

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

Mr. Barry Dezell
Page 4

August 20, 1991
PACE Project Number: 610819501

PNG Winston Salem

PACE Sample Number:			92 0091647	
Date Collected:			08/16/91	
Date Received:			08/16/91	
			Diesel Pit	
Parameter	Units	MDL	Sample 1	DATE ANALYZED
ORGANIC ANALYSIS				
INDIVIDUAL PARAMETERS				
Diesel Extraction - Soil			8/20/91	08/20/91
Percent Solids	%	0.01	81.0	08/19/91
Total Hydrocarbons via Method 3550	mg/kg	5.0	ND	08/19/91
Total Hydrocarbons via Method 5030	mg/kg	6.0	6.0	08/19/91

MDL Method Detection Limit
ND Not detected at or above the MDL.

These data have been reviewed and are approved for release.

John T. Stimus
Manager, Organic Chemistry

1700 University Commercial Place
Charlotte, NC 28213
TEL: 704-597-8454
FAX: 704-597-8455